

■ Coated Spiral Fluted Taps ■

■ Coated Spiral Pointed Taps ■

VUSP

VUSP Long Shank

VUPO

VUSP 1.5P

VUSP CH

VUPO Long Shank

VUSERIES

Z-PRO Ultimate Machining Taps.
A new benchmark in high-performance tapping.



Ultimate Machining Taps

JIS / DIN / ANSI



VU Series

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Fluted Taps

VUSP

HSS-P

Coating



- Premium powder HSS and a special coating improve durability and extend tool life.
- Proprietary flute and edge geometry improve chip flow and reduce torque, extending tool life while maintaining thread quality.
- Longer projection clears the holder for smooth chip flow and improves coolant delivery to the cutting edges.

Versatile performance in a wide range of materials.

VUSP Recommended Tapping Conditions

Workpiece Material	Tapping Speed (m/min)
General Structural Steel	10~20
Carbon Steel	10~25

Workpiece Material	Tapping Speed (m/min)
Alloy Steel	10~20
Stainless Steel	5~10

VUSP is designed for use with water-soluble coolant.

Ideal for mid-speed tapping with water-soluble coolant.

Fluid	Hole type	Hand tapping	Drilling machine	Low speed (NC lathe, MC)	Medium speed (NC lathe, MC)	
Water soluble cutting fluid					VUSP Vc ≤ 25m/min	
					VUPO	
Water insoluble cutting fluid		HT IHT	ISP	SP	+SP	AU+SP
			IPO	PO	+PO	AU+SL

Tapping Data

Tapping conditions VUSP M8X1.25

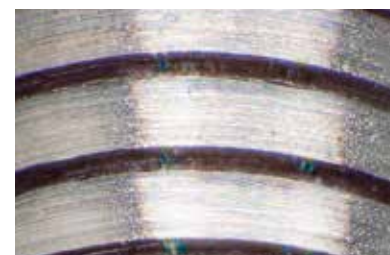
Workpiece Material	SUS304
Tapping Speed	10m/min
Machine	Vertical machining center
Tapping Fluid	Water soluble cutting fluid

Stable tapping performance thanks to smooth chip evacuation.



The proprietary geometry and semi-long overall length reduce chip/holder interference and improve coolant delivery with water-soluble coolant.

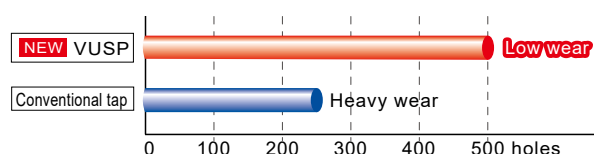
Excellent internal thread quality.



SUS304 is typically tapped with water insoluble tapping oil, but VUSP can produce an excellent thread finish even with water-soluble coolant.

Tapping conditions VUSP M3X0.5

Workpiece Material	S50C
Tapping Length	4.5mm
Tapping Speed	20m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid



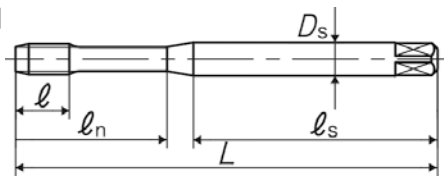
After 250 holes, wear was minimal with no chipping.

Coated Spiral Fluted Taps

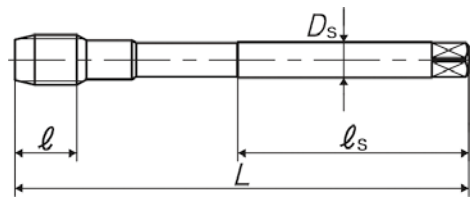
VUSP



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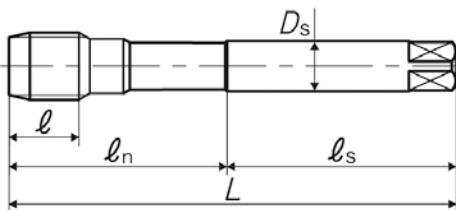
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M3X0.5	P2	1101101035	2.5P	56	5	18	32	4	3	1
M3X0.5	P3	1101201035	2.5P	56	5	18	32	4	3	1
M3X0.5	P4	1101301035	2.5P	56	5	18	32	4	3	1
M3X0.35	P2	1101101036	2.5P	56	5	18	32	4	3	1
M3X0.35	P3	1101201036	2.5P	56	5	18	32	4	3	1
M3X0.35	P4	1101301036	2.5P	56	5	18	32	4	3	1
M4X0.7	P2	1101101042	2.5P	63	7	21	36	5	3	1
M4X0.7	P3	1101201042	2.5P	63	7	21	36	5	3	1
M4X0.7	P4	1101301042	2.5P	63	7	21	36	5	3	1
M4X0.5	P2	1101101043	2.5P	63	5	21	36	5	3	1
M4X0.5	P3	1101201043	2.5P	63	5	21	36	5	3	1
M4X0.5	P4	1101301043	2.5P	63	5	21	36	5	3	1
M5X0.8	P2	1101101049	2.5P	70	9	25	40	5.5	3	1
M5X0.8	P3	1101201049	2.5P	70	9	25	40	5.5	3	1
M5X0.8	P4	1101301049	2.5P	70	9	25	40	5.5	3	1
M5X0.5	P2	1101101051	2.5P	70	6	25	40	5.5	3	1
M5X0.5	P3	1101201051	2.5P	70	6	25	40	5.5	3	1
M5X0.5	P4	1101301051	2.5P	70	6	25	40	5.5	3	1
M6X1	P2	1101101055	2.5P	80	11	30	45	6	3	1
M6X1	P3	1101201055	2.5P	80	11	30	45	6	3	1
M6X1	P4	1101301055	2.5P	80	11	30	45	6	3	1
M6X0.75	P2	1101101056	2.5P	80	8	30	45	6	3	1
M6X0.75	P3	1101201056	2.5P	80	8	30	45	6	3	1
M6X0.75	P4	1101301056	2.5P	80	8	30	45	6	3	1
M6X0.5	P2	1101101057	2.5P	80	8	30	45	6	3	1
M6X0.5	P3	1101201057	2.5P	80	8	30	45	6	3	1
M6X0.5	P4	1101301057	2.5P	80	8	30	45	6	3	1
M8X1.25	P3	1101101064	2.5P	90	12	-	46	6.2	3	2
M8X1.25	P4	1101201064	2.5P	90	12	-	46	6.2	3	2
M8X1.25	P5	1101301064	2.5P	90	12	-	46	6.2	3	2
M8X1	P3	1101101065	2.5P	90	12	-	46	6.2	3	2
M8X1	P4	1101201065	2.5P	90	12	-	46	6.2	3	2
M8X1	P5	1101301065	2.5P	90	12	-	46	6.2	3	2
M9X0.75	P3	1101101073	2.5P	100	10	-	51	7	3	2



⊙ ... New

⬜ Oversize

[TYPE:3]



Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M10X1.5	P3	1101101078	2.5P	100	13	-	51	7	3	2
M10X1.5	P4	1101201078	2.5P	100	13	-	51	7	3	2
M10X1.5	P5	1101301078	2.5P	100	13	-	51	7	3	2
M10X1.25	P3	1101101079	2.5P	100	13	-	51	7	3	2
M10X1.25	P4	1101201079	2.5P	100	13	-	51	7	3	2
M10X1.25	P5	1101301079	2.5P	100	13	-	51	7	3	2
M10X1	P3	1101101080	2.5P	100	13	-	51	7	3	2
M10X1	P4	1101201080	2.5P	100	13	-	51	7	3	2
M10X1	P5	1101301080	2.5P	100	13	-	51	7	3	2
M12X1.75	P4	1101101088	2.5P	110	15	-	56	8.5	3	2
M12X1.75	P5	1101201088	2.5P	110	15	-	56	8.5	3	2
M12X1.75	P6	1101301088	2.5P	110	15	-	56	8.5	3	2
M12X1.5	P3	1101101089	2.5P	110	15	-	56	8.5	3	2
M12X1.5	P4	1101201089	2.5P	110	15	-	56	8.5	3	2
M12X1.5	P5	1101301089	2.5P	110	15	-	56	8.5	3	2
M12X1.25	P3	1101101090	2.5P	110	15	-	56	8.5	3	2
M12X1.25	P4	1101201090	2.5P	110	15	-	56	8.5	3	2
M12X1.25	P5	1101301090	2.5P	110	15	-	56	8.5	3	2
M12X1	P3	1101101091	2.5P	110	15	-	56	8.5	3	2
M14X2	P4	1101101100	2.5P	110	18	-	56	10.5	3	2
M14X2	P5	1101201100	2.5P	110	18	-	56	10.5	3	2
M14X2	P6	1101301100	2.5P	110	18	-	56	10.5	3	2
M14X1.5	P3	1101101102	2.5P	110	14	-	56	10.5	3	2
M14X1.5	P4	1101201102	2.5P	110	14	-	56	10.5	3	2
M14X1.5	P5	1101301102	2.5P	110	14	-	56	10.5	3	2
M16X2	P4	1101101114	2.5P	110	18	-	56	12.5	3	2
M16X2	P5	1101201114	2.5P	110	18	-	56	12.5	3	2
M16X2	P6	1101301114	2.5P	110	18	-	56	12.5	3	2
M16X1.5	P3	1101101116	2.5P	110	14	-	56	12.5	3	2
M16X1.5	P4	1101201116	2.5P	110	14	-	56	12.5	3	2
M16X1.5	P5	1101301116	2.5P	110	14	-	56	12.5	3	2
M18X2.5	P5	1101101128	2.5P	125	20	-	64	14	4	2
M18X1.5	P4	1101101130	2.5P	125	14	-	64	14	3	2
M20X2.5	P5	1101101141	2.5P	140	20	-	71	15	4	3
M20X1.5	P4	1101101144	2.5P	140	14	-	71	15	3	3
M22X2.5	P5	1101101156	2.5P	140	20	-	71	17	4	3
M22X1.5	P4	1101101158	2.5P	140	14	-	71	17	3	3
M24X3	P5	1101101167	2.5P	160	25	-	82	19	4	3
M24X1.5	P4	1101101170	2.5P	160	18	-	82	19	3	3

⊙... New

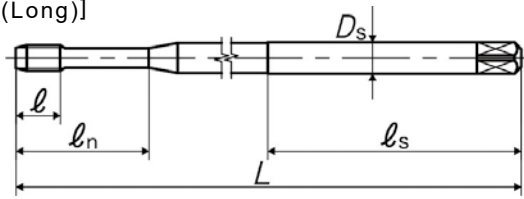
⬜ Oversize

Shape and Dimensions

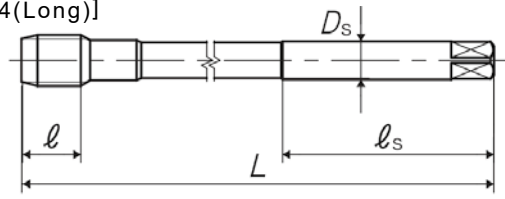
Coated Spiral Fluted Taps VUSP Long Shank



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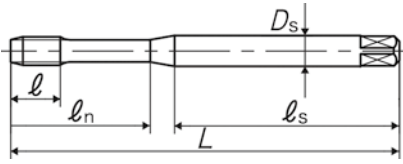
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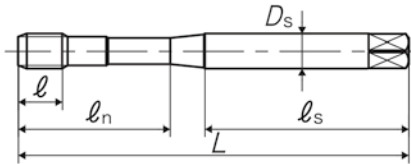
	Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No.of flutes	TYPE
⊙	M3X0.5	P2	2101101035	2.5P	100	5	18	32	4	3	1
⊙	M3X0.35	P2	2101101036	2.5P	100	5	18	32	4	3	1
⊙	M4X0.7	P2	2101101042	2.5P	100	7	21	36	5	3	1
⊙	M4X0.5	P2	2101101043	2.5P	100	5	21	36	5	3	1
⊙	M5X0.8	P2	2101101049	2.5P	100	9	25	40	5.5	3	1
⊙	M5X0.5	P2	2101101051	2.5P	100	6	25	40	5.5	3	1
⊙	M6X1	P2	2101101055	2.5P	100	11	30	45	6	3	1
⊙	M6X0.75	P2	2101101056	2.5P	100	8	30	45	6	3	1
⊙	M6X0.5	P2	2101101057	2.5P	100	8	30	45	6	3	1
⊙	M8X1.25	P3	2101101064	2.5P	150	12	-	46	6.2	3	2
⊙	M8X1	P3	2101101065	2.5P	150	12	-	46	6.2	3	2
⊙	M10X1.5	P3	2101101078	2.5P	150	13	-	51	7	3	2
⊙	M10X1.25	P3	2101101079	2.5P	150	13	-	51	7	3	2
⊙	M10X1	P3	2101101080	2.5P	150	13	-	51	7	3	2
⊙	M12X1.75	P4	2101101088	2.5P	150	15	-	56	8.5	3	2
⊙	M12X1.5	P3	2101101089	2.5P	150	15	-	56	8.5	3	2
⊙	M12X1.25	P3	2101101090	2.5P	150	15	-	56	8.5	3	2
⊙	M14X2	P4	2101101100	2.5P	150	18	-	56	10.5	3	2
⊙	M14X1.5	P3	2101101102	2.5P	150	14	-	56	10.5	3	2
⊙	M16X2	P4	2101101114	2.5P	150	18	-	56	12.5	3	2
⊙	M16X1.5	P3	2101101116	2.5P	150	14	-	56	12.5	3	2

⊙... New

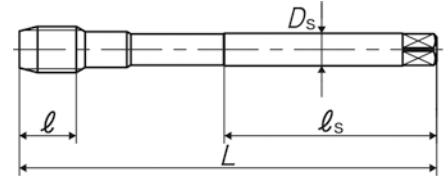
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[TYPE:2]



[TYPE:3]



	Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
⊙	M2.5X0.45	ISO2X	3101101029	2.5P	50	4	15	33	2.8	2	1
⊙	M2.6X0.45	ISO2X	3101101032	2.5P	50	4	15	33	2.8	2	1
	M3X0.5	ISO2X	3101101035	2.5P	56	5	18	34	3.5	3	1
⊙	M3X0.5	ISO3X	3101201035	2.5P	56	5	18	34	3.5	3	1
⊙	M3X0.5	7GX	3101301035	2.5P	56	5	18	34	3.5	3	1
⊙	M3X0.5	ISO2X+100	3101501035	2.5P	56	5	18	34	3.5	3	1
	M3X0.35	ISO2X	3101101036	2.5P	56	5	18	34	3.5	3	1
	M4X0.7	ISO2X	3101101042	2.5P	63	7	21	38	4.5	3	1
⊙	M4X0.7	ISO3X	3101201042	2.5P	63	7	21	38	4.5	3	1
⊙	M4X0.7	7GX	3101301042	2.5P	63	7	21	38	4.5	3	1
⊙	M4X0.7	ISO2X+100	3101501042	2.5P	63	7	21	38	4.5	3	1
	M4X0.5	ISO2X	3101101043	2.5P	63	5	21	38	4.5	3	1
	M5X0.8	ISO2X	3101101049	2.5P	70	9	25	39	6	3	1
⊙	M5X0.8	ISO3X	3101201049	2.5P	70	9	25	39	6	3	1
⊙	M5X0.8	7GX	3101301049	2.5P	70	9	25	39	6	3	1
⊙	M5X0.8	ISO2X+100	3101501049	2.5P	70	9	25	39	6	3	1
	M5X0.5	ISO2X	3101101051	2.5P	70	6	25	39	6	3	1
	M6X1	ISO2X	3101101055	2.5P	80	11	30	45	6	3	1
⊙	M6X1	ISO3X	3101201055	2.5P	80	11	30	45	6	3	1
⊙	M6X1	7GX	3101301055	2.5P	80	11	30	45	6	3	1
⊙	M6X1	ISO2X+100	3101501055	2.5P	80	11	30	45	6	3	1
	M6X0.75	ISO2X	3101101056	2.5P	80	8	30	45	6	3	1
	M6X0.5	ISO2X	3101101057	2.5P	80	8	30	45	6	3	1
	M8X1.25	ISO2X	3101101064	2.5P	90	12	35	47	8	3	2
⊙	M8X1.25	ISO3X	3101201064	2.5P	90	12	35	47	8	3	2
⊙	M8X1.25	7GX	3101301064	2.5P	90	12	35	47	8	3	2
⊙	M8X1.25	ISO2X+100	3101501064	2.5P	90	12	35	47	8	3	2
	M8X1	ISO2X	3101101065	2.5P	90	12		46	6	3	3

⊙... New

⬜ Oversize

Coated Spiral Fluted Taps

VUSP

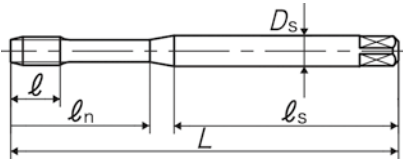
Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
M10X1.5	ISO2X	3101101078	2.5P	100	13	39	52	10	3	2
M10X1.5	ISO3X	3101201078	2.5P	100	13	39	52	10	3	2
M10X1.5	7GX	3101301078	2.5P	100	13	39	52	10	3	2
M10X1.5	ISO2X+100	3101501078	2.5P	100	13	39	52	10	3	2
M10X1.25	ISO2X	3101101079	2.5P	100	13	—	51	7	3	3
M10X1	ISO2X	3101101080	2.5P	90	13	—	46	7	3	3
M12X1.75	ISO2X	3101101088	2.5P	110	15	—	56	9	3	3
M12X1.75	ISO3X	3101201088	2.5P	110	15	—	56	9	3	3
M12X1.75	7GX	3101301088	2.5P	110	15	—	56	9	3	3
M12X1.75	ISO2X+100	3101501088	2.5P	110	15	—	56	9	3	3
M12X1.5	ISO2X	3101101089	2.5P	100	15	—	51	9	3	3
M12X1.25	ISO2X	3101101090	2.5P	100	15	—	51	9	3	3
M14X2	ISO2X	3101101100	2.5P	110	18	—	56	11	3	3
M14X2	ISO3X	3101201100	2.5P	110	18	—	56	11	3	3
M14X2	7GX	3101301100	2.5P	110	18	—	56	11	3	3
M14X2	ISO2X+100	3101501100	2.5P	110	18	—	56	11	3	3
M14X1.5	ISO2X	3101101102	2.5P	100	14	—	51	11	3	3
M16X2	ISO2X	3101101114	2.5P	110	18	—	56	12	3	3
M16X2	ISO3X	3101201114	2.5P	110	18	—	56	12	3	3
M16X2	7GX	3101301114	2.5P	110	18	—	56	12	3	3
M16X2	ISO2X+100	3101501114	2.5P	110	18	—	56	12	3	3
M16X1.5	ISO2X	3101101116	2.5P	100	14	—	51	12	3	3
M18X2.5	ISO2X	3101101128	2.5P	125	20	—	64	14	4	3
M18X1.5	ISO2X	3101101130	2.5P	110	14	—	56	14	3	3
M20X2.5	ISO2X	3101101141	2.5P	140	20	—	71	16	4	3
M20X1.5	ISO2X	3101101144	2.5P	125	14	—	64	16	3	3
M22X2.5	ISO2X	3101101156	2.5P	140	20	—	71	18	4	3
M22X1.5	ISO2X	3101101158	2.5P	125	14	—	64	18	3	3
M24X3	ISO2X	3101101167	2.5P	160	25	—	82	18	4	3
M24X1.5	ISO2X	3101101170	2.5P	140	18	—	71	18	3	3

⊙... New

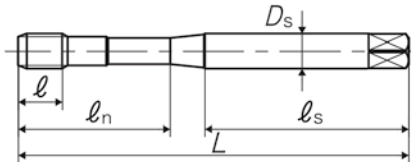
⬜ Oversize

Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
No.5-40UNC	2BX	3101103021	2.5P	56	5	18	34	3.5	2	1
No.5-44UNF	2BX	3101103022	2.5P	56	5	18	34	3.5	2	1
No.6-32UNC	2BX	3101103023	2.5P	56	7	19	32	4	2	1
No.6-40UNF	2BX	3101103024	2.5P	56	7	19	32	4	2	1
No.8-32UNC	2BX	3101103029	2.5P	63	7	21	38	4.5	2	1
No.8-36UNF	2BX	3101103030	2.5P	63	7	21	38	4.5	2	1
No.10-24UNC	2BX	3101103039	2.5P	70	9	24	39	6	2	1
No.10-32UNF	2BX	3101103041	2.5P	70	9	24	39	6	2	1
No.12-24UNC	2BX	3101103047	2.5P	80	9	28	45	6	2	1
No.12-28UNF	2BX	3101103048	2.5P	80	9	28	45	6	2	1
1/4-20UNC	2BX	3101103058	2.5P	80	11	30	42	7	2	1
1/4-28UNF	2BX	3101103062	2.5P	80	11	30	42	7	2	1
5/16-18UNC	2BX	3101103071	2.5P	90	12	35	47	8	3	2
3/8-16UNC	2BX	3101103082	2.5P	100	13	39	54	9	3	2
7/16-14UNC	2BX	3101103098	2.5P	100	13	—	51	8	3	3
1/2-13UNC	2BX	3101103111	2.5P	110	15	—	56	9	3	3
9/16-12UNC	2BX	3101103126	2.5P	110	18	—	56	11	3	3
5/8-11UNC	2BX	3101103138	2.5P	110	18	—	56	12	3	3

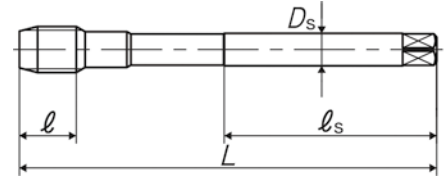
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[TYPE:3]



Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M3X0.5	D4	5101101035	2.5P	2.205	0.197	0.736	1.339	0.141	3	1
M3X0.35	D4	5101101036	2.5P	2.205	0.197	0.736	1.339	0.141	3	1
M4X0.7	D5	5101101042	2.5P	2.480	0.276	0.815	1.535	0.168	3	1
M4X0.5	D4	5101101043	2.5P	2.480	0.197	0.815	1.535	0.168	3	1
M5X0.8	D5	5101101049	2.5P	2.756	0.354	0.984	1.654	0.194	3	1
M5X0.5	D4	5101101051	2.5P	2.756	0.236	0.984	1.654	0.194	3	1
M6X1	D6	5101101055	2.5P	3.150	0.433	1.181	1.713	0.255	3	1
M6X0.75	D6	5101101056	2.5P	3.150	0.315	1.181	1.713	0.255	3	1
M6X0.5	D4	5101101057	2.5P	3.150	0.315	1.181	1.713	0.255	3	1
M8X1.25	D7	5101101064	2.5P	3.543	0.472	1.378	1.831	0.318	3	2
M8X1	D6	5101101065	2.5P	3.543	0.472	1.378	1.831	0.318	3	2
M10X1.5	D8	5101101078	2.5P	3.937	0.512	1.535	2.126	0.381	3	2
M10X1.25	D6	5101101079	2.5P	3.937	0.512	1.535	2.126	0.381	3	2
M10X1	D6	5101101080	2.5P	3.937	0.512	1.535	2.126	0.381	3	2
M12X1.75	D8	5101101088	2.5P	4.331	0.591	–	2.205	0.367	3	3
M12X1.5	D7	5101101089	2.5P	4.331	0.591	–	2.205	0.367	3	3
M12X1.25	D7	5101101090	2.5P	4.331	0.591	–	2.205	0.367	3	3
M14X2	D9	5101101100	2.5P	4.331	0.709	–	2.205	0.429	3	3
M14X1.5	D8	5101101102	2.5P	4.331	0.551	–	2.205	0.429	3	3
M16X2	D9	5101101114	2.5P	4.331	0.709	–	2.205	0.480	3	3
M16X1.5	D8	5101101116	2.5P	4.331	0.551	–	2.205	0.480	3	3
M18X2.5	D9	5101101128	2.5P	4.921	0.787	–	2.520	0.542	4	3
M18X1.5	D8	5101101130	2.5P	4.921	0.551	–	2.520	0.542	3	3
M20X2.5	D9	5101101141	2.5P	5.512	0.787	–	2.795	0.652	4	3
M20X1.5	D8	5101101144	2.5P	5.512	0.551	–	2.795	0.652	3	3
M22X2.5	D9	5101101156	2.5P	5.512	0.787	–	2.795	0.697	4	3
M22X1.5	D8	5101101158	2.5P	5.512	0.551	–	2.795	0.697	3	3
M24X3	D10	5101101167	2.5P	6.299	0.984	–	3.228	0.760	4	3
M24X1.5	D8	5101101170	2.5P	6.299	0.709	–	3.228	0.760	3	3

⊙... New

Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	D_s (mm)	No. of flutes	TYPE
⊙ No.5-40UNC	GH2	5101103021	2.5P	2.205	0.197	0.736	1.339	0.141	2	1
⊙ No.5-44UNF	GH2	5101103022	2.5P	2.205	0.197	0.736	1.339	0.141	2	1
⊙ No.6-32UNC	GH2	5101103023	2.5P	2.205	0.276	0.748	1.339	0.141	2	1
⊙ No.6-40UNF	GH2	5101103024	2.5P	2.205	0.276	0.748	1.339	0.141	2	1
⊙ No.8-32UNC	GH3	5101103029	2.5P	2.480	0.276	0.827	1.535	0.168	2	1
⊙ No.8-36UNF	GH3	5101103030	2.5P	2.480	0.276	0.827	1.535	0.168	2	1
⊙ No.10-24UNC	GH3	5101103039	2.5P	2.756	0.354	0.945	1.654	0.194	2	1
⊙ No.10-32UNF	GH3	5101103041	2.5P	2.756	0.354	0.945	1.654	0.194	2	1
⊙ No.12-24UNC	GH3	5101103047	2.5P	3.150	0.354	0.984	1.953	0.220	2	1
⊙ No.12-28UNF	GH3	5101103048	2.5P	3.150	0.354	0.984	1.953	0.220	2	1
⊙ 1/4-20UNC	GH3	5101103058	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
⊙ 1/4-20UNC	GH5	5101303058	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
⊙ 1/4-28UNF	GH3	5101103062	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
⊙ 1/4-28UNF	GH5	5101303062	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
⊙ 5/16-18UNC	GH5	5101103071	2.5P	3.543	0.472	1.378	1.831	0.318	3	2
⊙ 3/8-16UNC	GH5	5101103082	2.5P	3.937	0.512	1.535	2.028	0.381	3	2
⊙ 7/16-14UNC	GH5	5101103098	2.5P	3.937	0.512	–	2.008	0.323	3	3
⊙ 1/2-13UNC	GH5	5101103111	2.5P	4.331	0.591	–	2.205	0.367	3	3
⊙ 9/16-12UNC	GH5	5101103126	2.5P	4.331	0.709	–	2.205	0.429	3	3
⊙ 5/8-11UNC	GH5	5101103138	2.5P	4.331	0.709	–	2.205	0.480	3	3

⊙... New

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Fluted Taps 1.5P **VUSP 1.5P**



- A 1.5P lead makes it ideal for blind holes with limited pilot-hole depth and effective thread length.
- Premium powder HSS and a special coating improve durability and extend tool life.
- Proprietary geometry improves chip evacuation and reduces tapping torque, delivering excellent internal threads and long tool life.
- Longer projection clears the holder for smooth chip flow and improves coolant delivery to the cutting edges.
- Optimized for water-soluble coolant.

Compatible with a wide range of workpiece material

Workpiece Material	Tapping Speed(m/min)
Low Carbon Steels	5~15
Medium Carbon Steels / High Carbon Steels	5~15
Alloy Steels	5~15
Stainless Steels	3~10

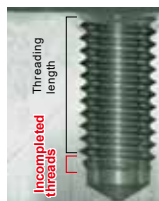
Workpiece Material	Tapping Speed(m/min)
Tools Steels	5~10
Ductile Cast Irons	5~15
Wrought Aluminum	5~20
Aluminum Alloy Castings	5~20

*For small diameters, reduce the tapping speed slightly.

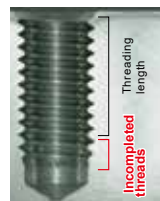
Tapping Data

Tapping conditions VUSP 1.5P M6X1

Workpiece Material	S50C
Tapping Speed	15m/min
Machine	Machining center, Vertical type
Tapping Fluid	Water soluble cutting fluid
Tapping Length	13mm, blind hole



VUSP 1.5P
Internal thread surface



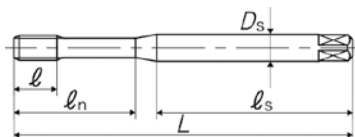
VUSP (chamfer 2.5P)
Internal thread surface

Shape and Dimensions

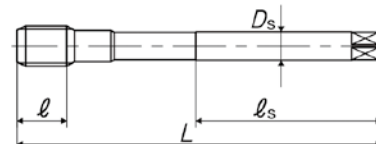
Coated Spiral Fluted Taps 1.5P **VUSP 1.5P**



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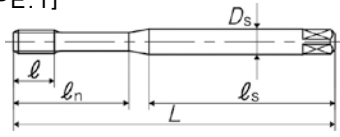
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M3X0.5	P2	1103101035	1.5P	56	5	18	32	4	3	1
M3X0.35	P2	1103101036	1.5P	56	5	18	32	4	3	1
M4X0.7	P2	1103101042	1.5P	63	7	21	36	5	3	1
M4X0.5	P2	1103101043	1.5P	63	5	21	36	5	3	1
M5X0.8	P2	1103101049	1.5P	70	9	25	40	5.5	3	1
M5X0.5	P2	1103101051	1.5P	70	6	25	40	5.5	3	1
M6X1	P2	1103101055	1.5P	80	11	30	45	6	3	1
M6X0.75	P2	1103101056	1.5P	80	8	30	45	6	3	1
M6X0.5	P2	1103101057	1.5P	80	8	30	45	6	3	1
M8X1.25	P3	1103101064	1.5P	90	12	-	46	6.2	3	2
M8X1	P3	1103101065	1.5P	90	12	-	46	6.2	3	2
M10X1.5	P3	1103101078	1.5P	100	13	-	51	7	3	2
M10X1.25	P3	1103101079	1.5P	100	13	-	51	7	3	2
M10X1	P3	1103101080	1.5P	100	13	-	51	7	3	2
M12X1.75	P4	1103101088	1.5P	110	15	-	56	8.5	3	2
M12X1.5	P3	1103101089	1.5P	110	15	-	56	8.5	3	2
M12X1.25	P3	1103101090	1.5P	110	15	-	56	8.5	3	2
M14X2	P4	1103101100	1.5P	110	18	-	56	10.5	3	2
M14X1.5	P3	1103101102	1.5P	110	14	-	56	10.5	3	2
M16X2	P4	1103101114	1.5P	110	18	-	56	12.5	3	2
M16X1.5	P3	1103101116	1.5P	110	14	-	56	12.5	3	2

Shape and Dimensions

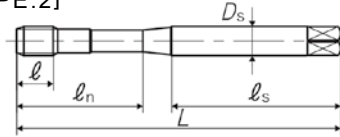
Coated Spiral Fluted Taps 1.5P **VUSP E**

In DIN-standard products, VUSP 1.5P is designated as VUSP E.

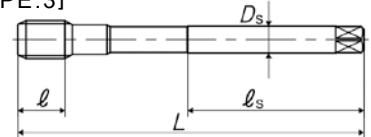
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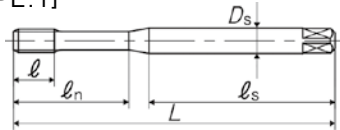
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M3X0.5	ISO2X	3103101035	E(1.5P)	56	5	18	34	3.5	3	1
M3X0.35	ISO2X	3103101036	E(1.5P)	56	5	18	34	3.5	3	1
M4X0.7	ISO2X	3103101042	E(1.5P)	63	7	21	38	4.5	3	1
M4X0.5	ISO2X	3103101043	E(1.5P)	63	5	21	38	4.5	3	1
M5X0.8	ISO2X	3103101049	E(1.5P)	70	9	25	39	6	3	1
M5X0.5	ISO2X	3103101051	E(1.5P)	70	6	25	39	6	3	1
M6X1	ISO2X	3103101055	E(1.5P)	80	11	30	45	6	3	1
M6X0.75	ISO2X	3103101056	E(1.5P)	80	8	30	45	6	3	1
M6X0.5	ISO2X	3103101057	E(1.5P)	80	8	30	45	6	3	1
M8X1.25	ISO2X	3103101064	E(1.5P)	90	12	35	47	8	3	2
M8X1	ISO2X	3103101065	E(1.5P)	90	12	-	46	6	3	3
M10X1.5	ISO2X	3103101078	E(1.5P)	100	13	39	52	10	3	2
M10X1.25	ISO2X	3103101079	E(1.5P)	100	13	-	51	7	3	3
M10X1	ISO2X	3103101080	E(1.5P)	90	13	-	46	7	3	3
M12X1.75	ISO2X	3103101088	E(1.5P)	110	15	-	56	9	3	3
M12X1.5	ISO2X	3103101089	E(1.5P)	100	15	-	51	9	3	3
M12X1.25	ISO2X	3103101090	E(1.5P)	100	15	-	51	9	3	3
M14X2	ISO2X	3103101100	E(1.5P)	110	18	-	56	11	3	3
M14X1.5	ISO2X	3103101102	E(1.5P)	100	14	-	51	11	3	3
M16X2	ISO2X	3103101114	E(1.5P)	110	18	-	56	12	3	3
M16X1.5	ISO2X	3103101116	E(1.5P)	100	14	-	51	12	3	3

⊙... New

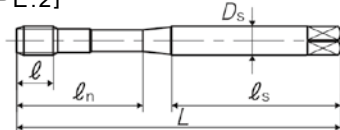
Shape and Dimensions

Coated Spiral Fluted Taps 1.5P **VUSP 1.5P**

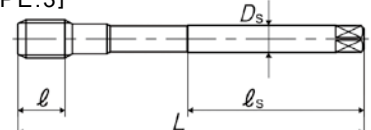
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Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M3X0.5	D4	5103101035	1.5P	2.205	0.197	0.736	1.339	0.141	3	1
M3X0.35	D4	5103101036	1.5P	2.205	0.197	0.736	1.339	0.141	3	1
M4X0.7	D5	5103101042	1.5P	2.480	0.276	0.815	1.535	0.168	3	1
M4X0.5	D4	5103101043	1.5P	2.480	0.197	0.815	1.535	0.168	3	1
M5X0.8	D5	5103101049	1.5P	2.756	0.354	0.984	1.654	0.194	3	1
M5X0.5	D4	5103101051	1.5P	2.756	0.236	0.984	1.654	0.194	3	1
M6X1	D6	5103101055	1.5P	3.150	0.433	1.181	1.713	0.255	3	1
M6X0.75	D6	5103101056	1.5P	3.150	0.315	1.181	1.713	0.255	3	1
M6X0.5	D4	5103101057	1.5P	3.150	0.315	1.181	1.713	0.255	3	1
M8X1.25	D7	5103101064	1.5P	3.543	0.472	1.378	1.831	0.318	3	2
M8X1	D6	5103101065	1.5P	3.543	0.472	1.378	1.831	0.318	3	2
M10X1.5	D8	5103101078	1.5P	3.937	0.512	1.535	2.126	0.381	3	2
M10X1.25	D6	5103101079	1.5P	3.937	0.512	1.535	2.126	0.381	3	2
M10X1	D6	5103101080	1.5P	3.937	0.512	1.535	2.126	0.381	3	2
M12X1.75	D8	5103101088	1.5P	4.331	0.591	-	2.205	0.367	3	3
M12X1.5	D7	5103101089	1.5P	4.331	0.591	-	2.205	0.367	3	3
M12X1.25	D7	5103101090	1.5P	4.331	0.591	-	2.205	0.367	3	3
M14X2	D9	5103101100	1.5P	4.331	0.709	-	2.205	0.429	3	3
M14X1.5	D8	5103101102	1.5P	4.331	0.551	-	2.205	0.429	3	3
M16X2	D9	5103101114	1.5P	4.331	0.709	-	2.205	0.480	3	3
M16X1.5	D8	5103101116	1.5P	4.331	0.551	-	2.205	0.480	3	3

⊙... New

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Fluted Taps with Coolant Through Hole

VUSP CH

HSS-P

Coating



- Premium powder HSS and a special coating improve durability.
- Improved chip evacuation and reduced tapping torque — enabled by proprietary geometry — extend tool life.
- Longer projection helps prevent holder/chip interference.
- Ideal for tapping with water-soluble coolant.
- The coolant-hole diameter is optimized for internal coolant supply, ensuring sufficient coolant at the lead, helping prevent welding and wear, and delivering an excellent thread finish.
- In addition, chips are discharged smoothly, allowing for continuous tapping.

Cutting condition



Coolant pressure : 1.5 MPa



Coolant pressure : 3 MPa



Coolant pressure : 6 MPa



Compatible with a wide range of workpiece material

Workpiece Material	Tapping Speed(m/min)
Low Carbon Steels	10~20
Medium Carbon Steels / High Carbon Steels	10~30
Alloy Steels	10~20
Stainless Steels	3~10

Workpiece Material	Tapping Speed(m/min)
Tools Steels	5~10
Ductile Cast Irons	10~20
Wrought Aluminum	10~20
Aluminum Alloy Castings	10~20

*For small diameters, reduce the tapping speed slightly.

Tapping Data

Tapping conditions
VUSP CH
M6X1

Workpiece Material	S50C
Tapping Length	12mm
Tapping Speed	20m/min
Machinery Type	CNC vertical machining center (Synchronous)
Tapping Fluid	Water soluble cutting fluid
Internal lubrication pressure	1.5MPa

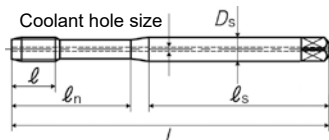
After tapping 500 holes		
Good surface internal threads	Less tap wear	Good chip quality

Shape and Dimensions

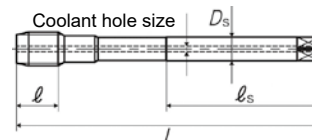
Coated Spiral Fluted Taps with Coolant Through Hole

VUSP CH

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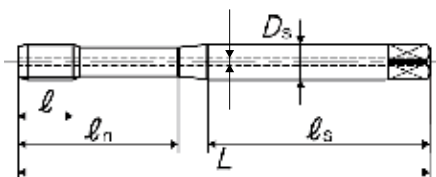


Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
M6X1	P2	1201101055	2.5P	80	11	30	45	6	3	1
M8X1.25	P3	1201101064	2.5P	90	12	—	46	6.2	3	2
M8X1	P3	1201101065	2.5P	90	12	—	46	6.2	3	2
M10X1.5	P3	1201101078	2.5P	100	13	—	51	7	3	2
M10X1.25	P3	1201101079	2.5P	100	13	—	51	7	3	2
M10X1	P3	1201101080	2.5P	100	13	—	51	7	3	2
M12X1.75	P4	1201101088	2.5P	110	15	—	56	8.5	3	2
M12X1.5	P3	1201101089	2.5P	110	15	—	56	8.5	3	2
M12X1.25	P3	1201101090	2.5P	110	15	—	56	8.5	3	2
M14X2	P4	1201101100	2.5P	110	18	—	56	10.5	3	2
M14X1.5	P3	1201101102	2.5P	110	14	—	56	10.5	3	2
M16X2	P4	1201101114	2.5P	110	18	—	56	12.5	3	2
M16X1.5	P3	1201101116	2.5P	110	14	—	56	12.5	3	2

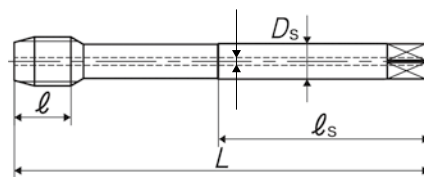
Coated Spiral Fluted Taps with Coolant Through Hole

VUSP CH

[TYPE:1]



[TYPE:2]



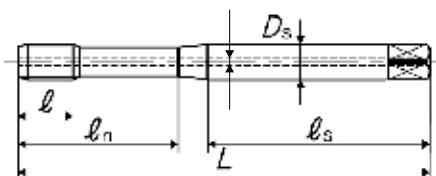
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
⊙ M6X1	ISO2X	3201101055	2.5P	80	11	30	45	6	3	1
⊙ M8X1.25	ISO2X	3201101064	2.5P	90	12	35	47	8	3	1
⊙ M8X1	ISO2X	3201101065	2.5P	90	12	-	46	6	3	2
⊙ M10X1.5	ISO2X	3201101078	2.5P	100	13	39	52	10	3	1
⊙ M10X1.25	ISO2X	3201101079	2.5P	100	13	-	51	7	3	2
⊙ M10X1	ISO2X	3201101080	2.5P	90	13	-	46	7	3	2
⊙ M12X1.75	ISO2X	3201101088	2.5P	110	15	-	56	9	3	2
⊙ M12X1.5	ISO2X	3201101089	2.5P	100	15	-	51	9	3	2
⊙ M12X1.25	ISO2X	3201101090	2.5P	100	15	-	51	9	3	2
⊙ M14X2	ISO2X	3201101100	2.5P	110	18	-	56	11	3	2
⊙ M14X1.5	ISO2X	3201101102	2.5P	100	14	-	51	11	3	2
⊙ M16X2	ISO2X	3201101114	2.5P	110	18	-	56	12	3	2
⊙ M16X1.5	ISO2X	3201101116	2.5P	100	14	-	51	12	3	2
⊙ 5/16-18UNC	2BX	3201103071	2.5P	90	12	35	47	8	3	1
⊙ 3/8-16UNC	2BX	3201103082	2.5P	100	13	39	54	9	3	1
⊙ 1/2-13UNC	2BX	3201103111	2.5P	110	15	-	56	9	3	2

⊙ ... New

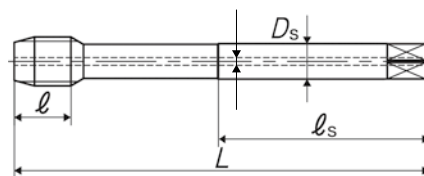
Coated Spiral Fluted Taps with Coolant Through Hole

VUSP CH

[TYPE:1]



[TYPE:2]



Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
5/16-18UNC	GH5	5201103071	2.5P	3.543	0.472	1.378	1.831	0.318	3	1
3/8-16UNC	GH5	5201103082	2.5P	3.937	0.512	1.535	2.028	0.381	3	1
1/2-13UNC	GH5	5201103111	2.5P	4.331	0.591	-	2.205	0.367	3	2

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Pointed Taps

VUPO

HSS-P

Coating



- Improved tool life from using a high grade of powder high speed steel with a special coating!
- Improved chip evacuation and cutting resistance from a unique flute shape to produce excellent internal threads!
- The extended overall length improves coolant delivery. Z-PRO VUPO is optimized for use with water-soluble coolant when adequate coolant flow is available.

Compatible with a wide range of workpiece material

VUPO Recommended Processing Conditions

Workpiece Material	Tapping Speed (m/min)	Workpiece Material	Tapping Speed (m/min)
General Structural Steel	10~30	Alloy Steel	10~30
Carbon Steel	10~30	Stainless Steel	5~15

VUPO is suitable for use with water-soluble cutting fluid

Ideal for machining in the medium speed range using water-soluble cutting fluid.

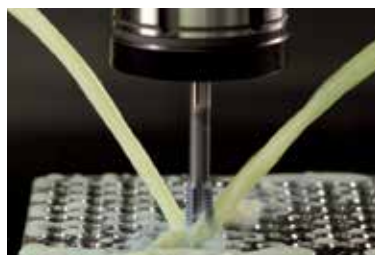
Fluid	Hole shape	Hand tapping	Drilling machine	Low speed (NC lathe, MC)	Middle speed (NC lathe, MC)	
Water soluble cutting fluid					VUSP	
					VUPO Vc ≤ 30m/min	
Oil		HT IHT	ISP	SP	+SP	AU+SP
			IPO	PO	+PO	AU+SL

Tapping Data

Tapping conditions VUPO M10X1.5

Workpiece material	SUS304
Tapping Speed	10m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid

Excellent coolant delivery



Proprietary geometry and longer projection enable excellent coolant delivery with water-soluble coolant.

Excellent internal thread



In tapping of SUS304, excellent internal thread surface is obtained even in tapping environments that use water-soluble cutting fluid.

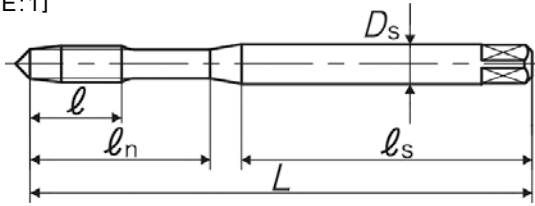
Tapping conditions VUPO M10X1.5

Workpiece material	S50C
Tapping length	20mm(2D)
Tapping Speed	20m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid

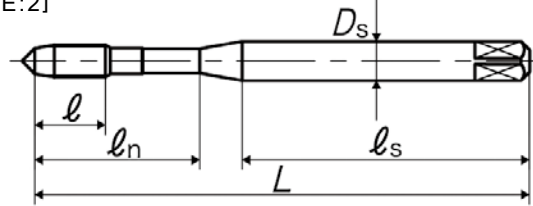
	NEW VUPO	Conventional tap
Wear after 560 holes tapped		

Coated Spiral Pointed Taps VUPO

[TYPE:1]



[TYPE:2]

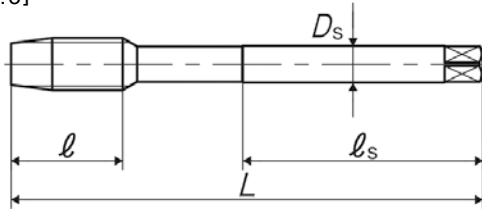


Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	Type
M2X0.4	P2	1102101021	5P	45	8	15	27	3	2	1
M2.2X0.45	P2	1102101024	5P	45	9	15	27	3	2	1
M2.3X0.4	P2	1102101026	5P	45	9	15	27	3	2	1
M2.5X0.45	P2	1102101029	5P	50	8	15	32	3	2	1
M2.6X0.45	P2	1102101032	5P	50	8	15	32	3	2	1
M3X0.5	P2	1102101035	5P	56	9	18	32	4	3	1
M3X0.5	P3	1102201035	5P	56	9	18	32	4	3	1
M3X0.5	P4	1102301035	5P	56	9	18	32	4	3	1
M3X0.35	P2	1102101036	5P	56	6.5	18	32	4	3	2
M3X0.35	P3	1102201036	5P	56	6.5	18	32	4	3	2
M3X0.35	P4	1102301036	5P	56	6.5	18	32	4	3	2
M4X0.7	P3	1102101042	5P	63	13	21	36	5	3	1
M4X0.7	P4	1102201042	5P	63	13	21	36	5	3	1
M4X0.7	P5	1102301042	5P	63	13	21	36	5	3	1
M4X0.5	P2	1102101043	5P	63	9	21	36	5	3	2
M4X0.5	P3	1102201043	5P	63	9	21	36	5	3	2
M4X0.5	P4	1102301043	5P	63	9	21	36	5	3	2
M5X0.8	P3	1102101049	5P	70	14	25	40	5.5	3	1
M5X0.8	P4	1102201049	5P	70	14	25	40	5.5	3	1
M5X0.8	P5	1102301049	5P	70	14	25	40	5.5	3	1
M5X0.5	P2	1102101051	5P	70	9	25	40	5.5	3	2
M5X0.5	P3	1102201051	5P	70	9	25	40	5.5	3	2
M5X0.5	P4	1102301051	5P	70	9	25	40	5.5	3	2
M6X1	P3	1102101055	5P	80	15	30	45	6	3	1
M6X1	P4	1102201055	5P	80	15	30	45	6	3	1
M6X1	P5	1102301055	5P	80	15	30	45	6	3	1
M6X0.75	P2	1102101056	5P	80	15	30	45	6	3	1
M6X0.75	P3	1102201056	5P	80	15	30	45	6	3	1
M6X0.75	P4	1102301056	5P	80	15	30	45	6	3	1
M6X0.5	P2	1102101057	5P	80	9	30	45	6	3	2
M6X0.5	P3	1102201057	5P	80	9	30	45	6	3	2
M6X0.5	P4	1102301057	5P	80	9	30	45	6	3	2

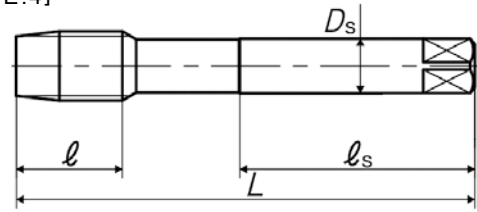
⊙... New

⬜ Oversize

[TYPE:3]



[TYPE:4]



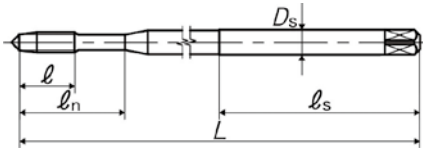
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	Type
M8X1.25	P3	1102101064	5P	90	19	–	46	6.2	3	3
M8X1.25	P4	1102201064	5P	90	19	–	46	6.2	3	3
M8X1.25	P5	1102301064	5P	90	19	–	46	6.2	3	3
M8X1	P3	1102101065	5P	90	19	–	46	6.2	3	3
M8X1	P4	1102201065	5P	90	19	–	46	6.2	3	3
M8X1	P5	1102301065	5P	90	19	–	46	6.2	3	3
M10X1.5	P3	1102101078	5P	100	23	–	51	7	3	3
M10X1.5	P4	1102201078	5P	100	23	–	51	7	3	3
M10X1.5	P5	1102301078	5P	100	23	–	51	7	3	3
M10X1.25	P3	1102101079	5P	100	23	–	51	7	3	3
M10X1.25	P4	1102201079	5P	100	23	–	51	7	3	3
M10X1.25	P5	1102301079	5P	100	23	–	51	7	3	3
M10X1	P3	1102101080	5P	100	23	–	51	7	3	3
M10X1	P4	1102201080	5P	100	23	–	51	7	3	3
M10X1	P5	1102301080	5P	100	23	–	51	7	3	3
M12X1.75	P4	1102101088	5P	110	26	–	56	8.5	3	3
M12X1.75	P5	1102201088	5P	110	26	–	56	8.5	3	3
M12X1.75	P6	1102301088	5P	110	26	–	56	8.5	3	3
M12X1.5	P3	1102101089	5P	110	26	–	56	8.5	3	3
M12X1.5	P4	1102201089	5P	110	26	–	56	8.5	3	3
M12X1.5	P5	1102301089	5P	110	26	–	56	8.5	3	3
M12X1.25	P4	1102101090	5P	110	26	–	56	8.5	3	3
M12X1.25	P5	1102201090	5P	110	26	–	56	8.5	3	3
M12X1.25	P6	1102301090	5P	110	26	–	56	8.5	3	3
M14X2	P4	1102101100	5P	110	26	–	56	10.5	3	3
M14X2	P5	1102201100	5P	110	26	–	56	10.5	3	3
M14X2	P6	1102301100	5P	110	26	–	56	10.5	3	3
M14X1.5	P3	1102101102	5P	110	26	–	56	10.5	3	3
M14X1.5	P4	1102201102	5P	110	26	–	56	10.5	3	3
M14X1.5	P5	1102301102	5P	110	26	–	56	10.5	3	3
M16X2	P4	1102101114	5P	110	26	–	56	12.5	3	3
M16X2	P5	1102201114	5P	110	26	–	56	12.5	3	3
M16X2	P6	1102301114	5P	110	26	–	56	12.5	3	3
M16X1.5	P3	1102101116	5P	110	26	–	56	12.5	3	3
M16X1.5	P4	1102201116	5P	110	26	–	56	12.5	3	3
M16X1.5	P5	1102301116	5P	110	26	–	56	12.5	3	3
M18X2.5	P5	1102101128	5P	125	33	–	64	14	3	3
M18X1.5	P4	1102101130	5P	125	33	–	64	14	3	3
M20X2.5	P5	1102101141	5P	140	33	–	71	15	3	4
M20X1.5	P4	1102101144	5P	140	33	–	71	15	3	4
M22X2.5	P5	1102101156	5P	140	33	–	71	17	3	4
M22X1.5	P4	1102101158	5P	140	33	–	71	17	3	4
M24X3	P5	1102101167	5P	160	37	–	82	19	3	4
M24X1.5	P4	1102101170	5P	160	37	–	82	19	3	4

Oversize

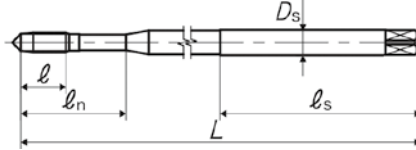
Coated Spiral Pointed Taps **VUPO Long Shank**



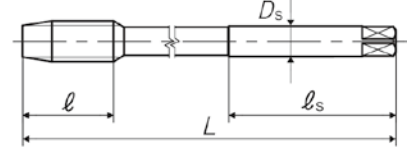
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[TYPE:2]



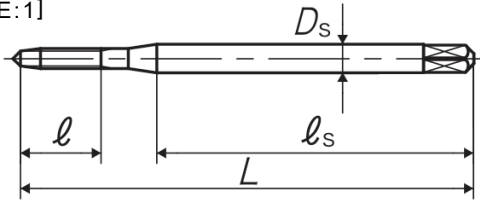
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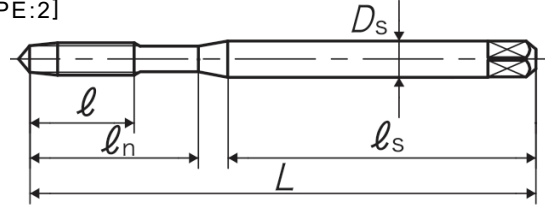
	Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
⊙	M3X0.5	P2	2102101035	5P	100	9	18	32	4	3	1
⊙	M3X0.35	P2	2102101036	5P	100	6.5	18	32	4	3	2
⊙	M4X0.7	P3	2102101042	5P	100	11	21	36	5	3	1
⊙	M4X0.5	P2	2102101043	5P	100	9	21	36	5	3	2
⊙	M5X0.8	P3	2102101049	5P	100	13	25	40	5.5	3	1
⊙	M5X0.5	P2	2102101051	5P	100	9	25	40	5.5	3	2
⊙	M6X1	P3	2102101055	5P	100	15	30	45	6	3	1
⊙	M6X0.75	P2	2102101056	5P	100	15	30	45	6	3	1
⊙	M6X0.5	P2	2102101057	5P	100	9	30	45	6	3	2
⊙	M8X1.25	P3	2102101064	5P	150	19	–	46	6.2	3	3
⊙	M8X1	P3	2102101065	5P	150	19	–	46	6.2	3	3
⊙	M10X1.5	P3	2102101078	5P	150	23	–	51	7	3	3
⊙	M10X1.25	P3	2102101079	5P	150	23	–	51	7	3	3
⊙	M10X1	P3	2102101080	5P	150	23	–	51	7	3	3
⊙	M12X1.75	P4	2102101088	5P	150	26	–	56	8.5	3	3
⊙	M12X1.5	P3	2102101089	5P	150	26	–	56	8.5	3	3
⊙	M12X1.25	P4	2102101090	5P	150	26	–	56	8.5	3	3
⊙	M14X2	P4	2102101100	5P	150	26	–	56	10.5	3	3
⊙	M14X1.5	P3	2102101102	5P	150	26	–	56	10.5	3	3
⊙	M16X2	P4	2102101114	5P	150	26	–	56	12.5	3	3
⊙	M16X1.5	P3	2102101116	5P	150	26	–	56	12.5	3	3

⊙... New

[TYPE:1]



[TYPE:2]

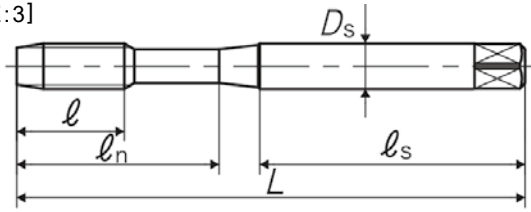


Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M2X0.4	ISO2X	3102101021	B(5P)	45	8	-	32	2.8	2	1
M2.2X0.45	ISO2X	3102101024	B(5P)	45	9	-	32	2.8	2	1
M2.3X0.4	ISO2X	3102101026	B(5P)	45	9	-	32	2.8	2	1
M2.5X0.45	ISO2X	3102101029	B(5P)	50	8	15	33	2.8	2	2
M2.6X0.45	ISO2X	3102101032	B(5P)	50	8	15	33	2.8	2	2
M3X0.5	ISO2X	3102101035	B(5P)	56	9	18	34	3.5	3	2
M3X0.5	ISO3X	3102201035	B(5P)	56	9	18	34	3.5	3	2
M3X0.5	7GX	3102301035	B(5P)	56	9	18	34	3.5	3	2
M3X0.5	ISO2X+100	3102501035	B(5P)	56	9	18	34	3.5	3	2
M3X0.35	ISO2X	3102101036	B(5P)	56	6.5	18	34	3.5	3	2
M4X0.7	ISO2X	3102101042	B(5P)	63	13	21	38	4.5	3	2
M4X0.7	ISO3X	3102201042	B(5P)	63	13	21	38	4.5	3	2
M4X0.7	7GX	3102301042	B(5P)	63	13	21	38	4.5	3	2
M4X0.7	ISO2X+100	3102501042	B(5P)	63	13	21	38	4.5	3	2
M4X0.5	ISO2X	3102101043	B(5P)	63	9	21	38	4.5	3	2
M5X0.8	ISO2X	3102101049	B(5P)	70	14	25	39	6	3	2
M5X0.8	ISO3X	3102201049	B(5P)	70	14	25	39	6	3	2
M5X0.8	7GX	3102301049	B(5P)	70	14	25	39	6	3	2
M5X0.8	ISO2X+100	3102501049	B(5P)	70	14	25	39	6	3	2
M5X0.5	ISO2X	3102101051	B(5P)	70	9	25	39	6	3	2
M6X1	ISO2X	3102101055	B(5P)	80	15	30	45	6	3	2
M6X1	ISO3X	3102201055	B(5P)	80	15	30	45	6	3	2
M6X1	7GX	3102301055	B(5P)	80	15	30	45	6	3	2
M6X1	ISO2X+100	3102501055	B(5P)	80	15	30	45	6	3	2
M6X0.75	ISO2X	3102101056	B(5P)	80	15	30	45	6	3	2
M6X0.5	ISO2X	3102101057	B(5P)	80	9	30	45	6	3	2

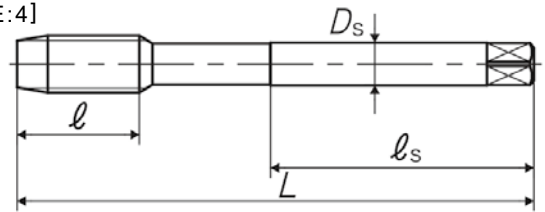
⊙... New

⊞ Oversize

[TYPE:3]



[TYPE:4]



Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	TYPE
M8X1.25	ISO2X	3102101064	B(5P)	90	19	35	47	8	3	3
M8X1.25	ISO3X	3102201064	B(5P)	90	19	35	47	8	3	3
M8X1.25	7GX	3102301064	B(5P)	90	19	35	47	8	3	3
M8X1.25	ISO2X+100	3102501064	B(5P)	90	19	35	47	8	3	3
M8X1	ISO2X	3102101065	B(5P)	90	19	-	46	6	3	4
M10X1.5	ISO2X	3102101078	B(5P)	100	23	39	52.5	10	3	3
M10X1.5	ISO3X	3102201078	B(5P)	100	23	39	52.5	10	3	3
M10X1.5	7GX	3102301078	B(5P)	100	23	39	52.5	10	3	3
M10X1.5	ISO2X+100	3102501078	B(5P)	100	23	39	52.5	10	3	3
M10X1.25	ISO2X	3102101079	B(5P)	100	23	-	51	7	3	4
M10X1	ISO2X	3102101080	B(5P)	90	19	-	46	7	3	4
M12X1.75	ISO2X	3102101088	B(5P)	110	26	-	56	9	3	4
M12X1.75	ISO3X	3102201088	B(5P)	110	26	-	56	9	3	4
M12X1.75	7GX	3102301088	B(5P)	110	26	-	56	9	3	4
M12X1.75	ISO2X+100	3102501088	B(5P)	110	26	-	56	9	3	4
M12X1.5	ISO2X	3102101089	B(5P)	100	21	-	51	9	3	4
M12X1.25	ISO2X	3102101090	B(5P)	100	21	-	51	9	3	4
M14X2	ISO2X	3102101100	B(5P)	110	26	-	56	11	3	4
M14X2	ISO3X	3102201100	B(5P)	110	26	-	56	11	3	4
M14X2	7GX	3102301100	B(5P)	110	26	-	56	11	3	4
M14X2	ISO2X+100	3102501100	B(5P)	110	26	-	56	11	3	4
M14X1.5	ISO2X	3102101102	B(5P)	100	21	-	51	11	3	4
M16X2	ISO2X	3102101114	B(5P)	110	26	-	56	12	3	4
M16X2	ISO3X	3102201114	B(5P)	110	26	-	56	12	3	4
M16X2	7GX	3102301114	B(5P)	110	26	-	56	12	3	4
M16X2	ISO2X+100	3102501114	B(5P)	110	26	-	56	12	3	4
M16X1.5	ISO2X	3102101116	B(5P)	100	21	-	51	12	3	4
M18X2.5	ISO2X	3102101128	B(5P)	125	33	-	64	14	3	4
M18X1.5	ISO2X	3102101130	B(5P)	110	24	-	56	14	3	4
M20X2.5	ISO2X	3102101141	B(5P)	140	33	-	71	16	3	4
M20X1.5	ISO2X	3102101144	B(5P)	125	24	-	64	16	3	4
M22X2.5	ISO2X	3102101156	B(5P)	140	33	-	71	18	3	4
M22X1.5	ISO2X	3102101158	B(5P)	125	24	-	64	18	3	4
M24X3	ISO2X	3102101167	B(5P)	160	37	-	82	18	3	4
M24X1.5	ISO2X	3102101170	B(5P)	140	27	-	71	18	3	4

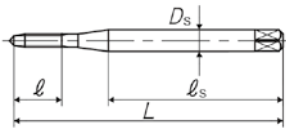
⊙... New

■ Oversize

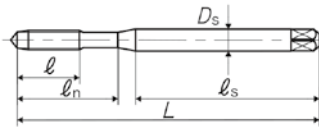
	Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
⊙	No.5-40UNC	2BX	3102103021	B(5P)	56	11	18	34	3.5	2	2
⊙	No.5-44UNF	2BX	3102103022	B(5P)	56	11	18	34	3.5	2	2
⊙	No.6-32UNC	2BX	3102103023	B(5P)	56	11	19	32	4	2	2
⊙	No.6-40UNF	2BX	3102103024	B(5P)	56	11	19	32	4	2	2
⊙	No.8-32UNC	2BX	3102103029	B(5P)	63	13	21	38	4.5	2	2
⊙	No.8-36UNF	2BX	3102103030	B(5P)	63	13	21	38	4.5	2	2
⊙	No.10-24UNC	2BX	3102103039	B(5P)	70	14	24	39	6	2	2
⊙	No.10-32UNF	2BX	3102103041	B(5P)	70	14	24	39	6	2	2
⊙	No.12-24UNC	2BX	3102103047	B(5P)	80	15	28	45	6	2	2
⊙	No.12-28UNF	2BX	3102103048	B(5P)	80	15	28	45	6	2	2
⊙	1/4-20UNC	2BX	3102103058	B(5P)	80	15	30	42	7	3	2
⊙	1/4-28UNF	2BX	3102103062	B(5P)	80	15	30	42	7	3	2
⊙	5/16-18UNC	2BX	3102103071	B(5P)	90	19	35	47	8	3	3
⊙	5/16-24UNF	2BX	3102103074	B(5P)	90	19	-	46	6	3	4
⊙	3/8-16UNC	2BX	3102103082	B(5P)	100	23	39	54	9	3	3
⊙	3/8-24UNF	2BX	3102103085	B(5P)	100	23	-	51	7	3	4
⊙	7/16-14UNC	2BX	3102103098	B(5P)	100	23	-	51	8	3	4
⊙	7/16-20UNF	2BX	3102103101	B(5P)	100	23	-	51	8	3	4
⊙	1/2-13UNC	2BX	3102103111	B(5P)	110	26	-	56	9	3	4
⊙	1/2-20UNF	2BX	3102103115	B(5P)	100	21	-	51	9	3	4
⊙	9/16-12UNC	2BX	3102103126	B(5P)	110	26	-	56	11	3	4
⊙	9/16-18UNF	2BX	3102103129	B(5P)	100	21	-	51	11	3	4
⊙	5/8-11UNC	2BX	3102103138	B(5P)	110	26	-	56	12	3	4
⊙	5/8-18UNF	2BX	3102103142	B(5P)	100	21	-	51	12	3	4
⊙	3/4-10UNC	2BX	3102103161	B(5P)	125	33	-	64	14	3	4
⊙	3/4-16UNF	2BX	3102103164	B(5P)	110	24	-	56	14	3	4
⊙	7/8-9UNC	2BX	3102103181	B(5P)	140	33	-	71	18	3	4
⊙	7/8-14UNF	2BX	3102103184	B(5P)	125	24	-	64	18	3	4

⊙... New

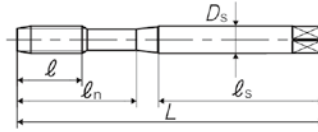
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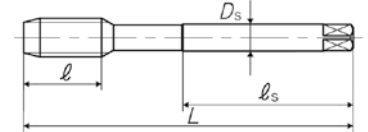
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	Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	TYPE
⊙	M2X0.4	D4	5102101021	5P	1.772	0.314	–	1.161	0.141	2	1
⊙	M2.2X0.45	D4	5102101024	5P	1.772	0.314	–	1.161	0.141	2	1
⊙	M2.3X0.4	D4	5102101026	5P	1.772	0.314	–	1.161	0.141	2	1
⊙	M2.5X0.45	D4	5102101029	5P	2.205	0.354	0.693	1.280	0.141	2	2
⊙	M2.6X0.45	D4	5102101032	5P	2.205	0.354	0.709	1.280	0.141	2	2
⊙	M3X0.5	D4	5102101035	5P	2.205	0.433	0.736	1.339	0.141	3	2
⊙	M3X0.35	D4	5102101036	5P	2.205	0.256	0.736	1.339	0.141	3	2
⊙	M4X0.7	D5	5102101042	5P	2.480	0.512	0.815	1.535	0.168	3	2
⊙	M4X0.5	D4	5102101043	5P	2.480	0.354	0.815	1.535	0.168	3	2
⊙	M5X0.8	D5	5102101049	5P	2.756	0.551	0.984	1.654	0.194	3	2
⊙	M5X0.5	D4	5102101051	5P	2.756	0.354	0.984	1.654	0.194	3	2
⊙	M6X1	D6	5102101055	5P	3.150	0.591	1.181	1.713	0.255	3	2
⊙	M6X0.75	D6	5102101056	5P	3.150	0.591	1.181	1.713	0.255	3	2
⊙	M6X0.5	D4	5102101057	5P	3.150	0.354	1.181	1.713	0.255	3	2
⊙	M8X1.25	D7	5102101064	5P	3.543	0.748	1.378	1.831	0.318	3	3
⊙	M8X1	D6	5102101065	5P	3.543	0.748	1.378	1.831	0.318	3	3
⊙	M10X1.5	D8	5102101078	5P	3.937	0.906	1.535	2.126	0.381	3	3
⊙	M10X1.25	D7	5102101079	5P	3.937	0.906	1.535	2.126	0.381	3	3
⊙	M10X1	D6	5102101080	5P	3.937	0.906	1.535	2.126	0.381	3	3
⊙	M12X1.75	D8	5102101088	5P	4.331	1.024	–	2.205	0.367	3	4
⊙	M12X1.5	D8	5102101089	5P	4.331	1.024	–	2.205	0.367	3	4
⊙	M12X1.25	D7	5102101090	5P	4.331	1.024	–	2.205	0.367	3	4
⊙	M14X2	D9	5102101100	5P	4.331	1.024	–	2.205	0.429	3	4
⊙	M14X1.5	D8	5102101102	5P	4.331	1.024	–	2.205	0.429	3	4
⊙	M16X2	D9	5102101114	5P	4.331	1.024	–	2.205	0.480	3	4
⊙	M16X1.5	D8	5102101116	5P	4.331	1.024	–	2.205	0.480	3	4
⊙	M18X2.5	D9	5102101128	5P	4.921	1.299	–	2.520	0.542	3	4
⊙	M18X1.5	D8	5102101130	5P	4.921	0.945	–	2.520	0.542	3	4
⊙	M20X2.5	D9	5102101141	5P	5.512	1.299	–	2.795	0.652	3	4
⊙	M20X1.5	D8	5102101144	5P	5.512	0.945	–	2.795	0.652	3	4
⊙	M22X2.5	D9	5102101156	5P	5.512	1.299	–	2.795	0.697	3	4
⊙	M22X1.5	D8	5102101158	5P	5.512	0.945	–	2.795	0.697	3	4
⊙	M24X3	D10	5102101167	5P	6.299	1.457	–	3.228	0.760	3	4
⊙	M24X1.5	D8	5102101170	5P	6.299	1.063	–	3.228	0.760	3	4

⊙... New

	Size	Class	Product Code	Chamfer	L (mm)	l (mm)	l_n (mm)	l_s (mm)	D_s (mm)	No. of flutes	TYPE
⊙	No.5-40UNC	GH2	5102103021	5P	2.205	0.433	0.736	1.339	0.141	2	2
⊙	No.5-44UNF	GH2	5102103022	5P	2.205	0.433	0.736	1.339	0.141	2	2
⊙	No.6-32UNC	GH3	5102103023	5P	2.205	0.433	0.748	1.339	0.141	2	2
⊙	No.6-40UNF	GH2	5102103024	5P	2.205	0.433	0.748	1.339	0.141	2	2
⊙	No.8-32UNC	GH3	5102103029	5P	2.480	0.512	0.827	1.535	0.168	2	2
⊙	No.8-36UNF	GH2	5102103030	5P	2.480	0.512	0.827	1.535	0.168	2	2
⊙	No.10-24UNC	GH3	5102103039	5P	2.756	0.551	0.945	1.654	0.194	2	2
⊙	No.10-32UNF	GH3	5102103041	5P	2.756	0.551	0.945	1.654	0.194	2	2
⊙	No.12-24UNC	GH3	5102103047	5P	3.150	0.591	0.984	1.953	0.220	2	2
⊙	No.12-28UNF	GH3	5102103048	5P	3.150	0.591	0.984	1.953	0.220	2	2
	1/4-20UNC	GH5	5102103058	5P	3.150	0.591	1.181	1.713	0.255	3	2
⊙	1/4-28UNF	GH4	5102103062	5P	3.150	0.591	1.181	1.713	0.255	3	2
	5/16-18UNC	GH5	5102103071	5P	3.543	0.748	1.378	1.831	0.318	3	3
⊙	5/16-24UNF	GH4	5102103074	5P	3.543	0.748	1.378	1.831	0.318	3	3
	3/8-16UNC	GH5	5102103082	5P	3.937	0.906	1.535	2.028	0.381	3	3
⊙	3/8-24UNF	GH4	5102103085	5P	3.937	0.906	1.535	2.028	0.381	3	3
⊙	7/16-14UNC	GH5	5102103098	5P	3.937	0.906	–	2.008	0.323	3	4
⊙	7/16-20UNF	GH5	5102103101	5P	3.937	0.906	–	2.008	0.323	3	4
	1/2-13UNC	GH5	5102103111	5P	4.331	1.024	–	2.205	0.367	3	4
⊙	1/2-20UNF	GH5	5102103115	5P	4.331	1.024	–	2.205	0.367	3	4
⊙	9/16-12UNC	GH5	5102103126	5P	4.331	1.024	–	2.205	0.429	3	4
⊙	9/16-18UNF	GH5	5102103129	5P	4.331	1.024	–	2.205	0.429	3	4
⊙	5/8-11UNC	GH5	5102103138	5P	4.331	1.024	–	2.205	0.480	3	4
⊙	5/8-18UNF	GH5	5102103142	5P	4.331	1.024	–	2.205	0.480	3	4
⊙	3/4-10UNC	GH5	5102103161	5P	4.921	1.299	–	2.520	0.590	3	4
⊙	3/4-16UNF	GH5	5102103164	5P	4.921	1.299	–	2.520	0.590	3	4
⊙	7/8-9UNC	GH6	5102103181	5P	5.512	1.299	–	2.795	0.697	3	4
⊙	7/8-14UNF	GH6	5102103184	5P	5.512	1.299	–	2.795	0.697	3	4

⊙ ••• New

Proven results with the VU Series

VUSP For blind hole

Size	Workpiece material	Tapping condition/Tapping result							(Remarks) Conventional product status/Workpiece name
	Material symbol (Hardness)	Hole Size (mm)	Tapping Length (mm)(*)	Machine	Tapping speed (m/min)	Feed	Tapping Fluid	Tool Life (Holes)	
M 4 X 0.7	SKD11 (25HRC)	3.3	8 (2D)	M/C	10	Fully synchronous	Water soluble	500	Replaced due to chipping at 400 holes.
M 5 X 0.8	SCM435	4.2	15 (3D)	N/C	4	Gear	Water soluble	1,400	Broken at 100 holes due to entanglement of chips.
M 8 X 1.25	FCD750	6.8	20 (2.5D)	M/C	20	Fully synchronous	Water soluble	1,500	Replaced due to chipping at 1,000 holes.
M 8 X 1.25	SUS304	6.75	16 (2D)	M/C	15	Fully synchronous	Water soluble	1,390	Chipping occurs at 600 holes.
M 8 X 1.25	SS400	6.8	16 (2D)	M/C	30	Fully synchronous	Water soluble	1,500	Tool Life is 800 holes. • Workpiece name: Cylinder head
M 8 X 1.25	S50C	6.8	16 (2D)	M/C	15	Fully synchronous	Water soluble	900	Tool Life is 700 holes.
M10 X 1.5	SS400	8.5	15 (1.5D)	M/C	10	Fully synchronous	Water soluble	1,500	Tool Life is unstable.
M12 X 1.75	SS400	10.4	24 (2D)	M/C	12	Fully synchronous	Water soluble	2,800	Chipping randomly and breakage at 2,000 holes.
M12 X 1.75	PVC (Thermoplastic resin)	10.3	18 (1.5D)	M/C	19	Fully synchronous	Water soluble	5,000	Screw plug gauge OUT at 3,000 holes.
M12 X 1.75	SCM415	10.3	24 (2D)	N/C	7	Fully synchronous	Water soluble	800	Screw plug gauge OUT at 500 holes. • Workpiece name: Machine parts(Spindle)
M12 X 1.25	S45C	10.8	24 (2D)	Drilling machine	5.6	Non-synchronous	Oil (Spray)	1,100	Tool Life is 1,000 holes.
M14 X 2	SCM435 (35HRC)	12.1	21 (1.5D)	M/C	10	Fully synchronous	Oil	150	Broken at 10 holes due to entanglement of chips. • Workpiece name: Shaft
M16 X 1.5	S45C	14.5	32 (2D)	M/C	20	Fully synchronous	Water soluble	1,900	Screw plug gauge OUT at 1,500 holes. • Workpiece name: Rocker arm

*(D) shows the tapping length as a ratio of tap diameter.

VUPO For through hole

Size	Workpiece material	Tapping condition/Tapping result							(Remarks) Conventional product status/Workpiece name
	Material symbol (Hardness)	Hole Size (mm)	Tapping Length (mm)(*)	Machine	Tapping speed (m/min)	Feed	Tapping Fluid	Tool Life (Holes)	
M 3 X 0.5	SCM440 (39HRC)	2.5	6 (2D)	N/C	5.6	Fully synchronous	Water soluble	1,260	Tool Life is unstable and poor surface finish. • Workpiece name: Flange
M 3 X 0.5	S45C (25HRC)	2.5	9 (3D)	M/C	10	Fully synchronous	Water soluble	500	Tool Life is 400 holes.
M 4 X 0.7	SUS304	3.3	10 (2.5D)	M/C	10	Fully synchronous	Water soluble	830	The chamfer part is worn and replaced at about 300 holes.
M 4 X 0.7	A5052	3.4	12 (3D)	M/C	12	Fully synchronous	Water soluble	1,500	Tool Life is 1,000 holes. • Workpiece name: Medical parts
M 6 X 1	S33C	5.1	9 (1.5D)	M/C	20	Fully synchronous	Water soluble	4,500	Tool Life is 3,400 holes. • Workpiece name: Hub bearing
M 8 X 1.25	SUS303	6.8	12 (1.5D)	M/C	11	Fully synchronous	Water soluble	33,000	Replaced due to wear or chipping at 10,000 holes. • Workpiece name: Nut
M10 X 1.5	S45C	8.5	25 (2.5D)	M/C	7.5	Fully synchronous	Water soluble	3,600	Breaks randomly at 1,000 holes. • Workpiece name: Crank plate
M12 X 1.75	SCM415	10.3	24 (2D)	M/C	15	Fully synchronous	Water soluble	1,000	Replaced due to chipping at 700 holes.
M12 X 1.75	SCM440 (30HRC)	10.4	30 (2.5D)	N/C	11	Fully synchronous	Water soluble	650	Replaced due to chipping at 420 holes.
M12 X 1.25	S45C	10.2	36 (3D)	M/C	30	Non-synchronous	Water soluble	1,100	Tool Life is unstable.
M12 X 1.25	S43C	10.8	24 (2D)	M/C	15	Fully synchronous	Water soluble	1,500	Replaced due to chipping at 500 holes. • Workpiece name: Wheel shaft

*(D) shows the tapping length as a ratio of tap diameter.

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Warning

- ◆Tools may shatter during use. Wear safety eye cover or eye glasses to avoid injury during tapping.
- ◆Use tools under the proper tapping condition.
- ◆Never wear gloves during turning operations as the gloves may get caught in the tools.
- ◆Wear safety shoes to avoid foot injury by the falling tools.
- ◆When attaching tools to the machine, fasten firmly to avoid chatter and run-out.
- ◆Fasten the workpiece firmly so it never moves during the tapping operation. Never use worn tools or damaged tools.
- ◆Take a special care to prevent fire during machining. High temperature during tapping can cause a fire.

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